

ABSTRACT OF THE DISCLOSURE

**[0061]** Embodiments of the present invention include an integrated circuit to communicate with a memory device. The integrated circuit includes an optical transmitter and an optical bus coupled to the integrated circuit's optical transmitter. N optical receivers are coupled to the optical bus via N optical couplers. N memory modules are coupled to the N optical receivers. M memory devices are coupled to the N memory modules. The optical transmitter converts a signal to communicate with the N memory modules from an electrical signal to an optical signal. The optical bus propagates the optical signal. Each of the N optical couplers couple a one-Nth of the optical signal from the optical bus to each one of the N optical receivers, each of the N optical receivers converts its one-Nth of the optical signal to an electrical signal for its associated memory device.